

## **Remarks**

The above amended claims are submitted to be patentable over the art of record for the following reasons as listed in sections below.

To reply the 2-10-2006 Examiner's Action, and to follow the Examiner's proposed allowable claim amendments and the telephone Discussion of 4-27-2006 with the SPE,, Applicant is submitting this RCE under 37 CFR 1.114 with the fee, further Amendment and Remarks to place it in condition for allowance.

### **I. Applicant's Thanks and Appreciations**

**I.1. Applicant expresses his thanks to the Honorable Under Secretary of Commerce for Intellectual Property and Director of the USPTO Jon Dudas and the Honorable Commissioner for Patents John Doll for their very helpful advice and consideration.**

**I.2. Applicant thanks the SPE and the new Examiner for their writing one allowable claim for the present invention to respond the applicant's respectful request for constructive assistance pursuant to MPEP 707.07(j).**

**I.3. Applicant thanks the SPE for his time and constructive and helpful discussion and suggestions through the telephone discussion of 4-27-2006.**

### **II. Claim Amendments**

#### **II.1. Examiner's proposed allowable claim dated 3-1-2006 recites:**

“(new) A control method for an optical fiber drawing process control including the steps of:

measuring a preform outer diameter by a measurement device located immediately above a furnace in a heating and melting stage;

feeding the measured preform at a feeding speed into the furnace in a heating and melting stage;

while heating and melting said preform, drawing said preform at a drawing speed to change its geometrical size to form a bare optical fiber;

measuring said bare optical fiber by a first outer diameter measurement device located immediately after said furnace to provide a first bare fiber diameter measurement;

measuring said bare optical fiber by a second outer diameter measurement device located after said first outer diameter measurement device immediately above a coating device to provide a second bare fiber diameter measurement;

coating said bare optical fiber in said coating device;

providing the preform outer diameter measurement and the first and second bare fiber diameter measurements into a control system which controls said feeding speed of said preform into the furnace in the heating and melting stage and said drawing speed of said fiber;

calculating a preform diameter deviation of the measured preform diameter from a preselected preform diameter value, and a first bare fiber diameter deviation of the first measured bare fiber diameter from a first preselected bare fiber diameter value;

calculating a second bare fiber diameter deviation of the second measured bare fiber diameter from a second preselected bare fiber diameter value which is less than the first preselected bare fiber diameter value; and

generating control signals based on the measured preform diameter, the preselected preform diameter, the preform diameter deviation, the first measured bare fiber diameter, the first preselected bare fiber diameter, the first bare fiber diameter deviation, the second measured bare fiber diameter, the second preselected bare fiber diameter and the second bare fiber diameter deviation for said optical fiber drawing process control; and

adjusting the feeding speed of said preform and the drawing speed of said fiber according to said control signals.”

## **II.2. Applicant accepted the Examiner’s proposed allowable claim on 3-6-2006.**

- On 3-6-2006, Applicant respectfully accepted the Examiner’s proposed allowable claim as a new claim [now as new Claim 39] with the exact same limitation steps and words as proposed.
- To follow the Examiner’s proposed allowable claim amendments and the telephone Discussion of 4-27-2006 with the SPE, Applicant further amends the claims based on the Examiner’s proposed allowable claim, the telephone discussion and the Specification, with the SPE’s constructive assistance and advice for allowance.

### II.3. Brief of the further claim amendments.

To follow the Examiner's proposed allowable claim amendments and the telephone Discussion of 4-27-2006 with the SPE, Applicant further

- Cancels claims 6, 11, 16, 20, 28 and 30-36 which are the currently pending claims;
- Adds new claims 37-39; and
- Amends claims 21-22 and 24-26 as marked.

The reasonable amendments are supported by the specification and done by taking the Examiner's proposed allowable claim into account and following the telephone Discussion, and will not raise new issues.

A brief of amendments is as follows:

(1) Claim 37 (new): taking all paragraphs of the Examiner's proposed allowable claim with reasonable and supported amendments from the Specification, as marked below:

- a. "measuring a preform outer diameter by a measurement device ~~located immediately above a furnace in~~ before a heating and melting stage;

... ..

measuring said bare optical fiber by a first outer diameter measurement device located ~~immediately~~ after said furnace to provide a first bare fiber diameter measurement;

measuring said bare optical fiber by a second outer diameter measurement device located after said first outer diameter measurement device and immediately above a coating device to provide a second bare fiber diameter measurement".

The above amendment is reasonable and supported by the Specification, e.g., paragraphs 0040, 0045, 0047, and 0090, as recited as follows:

"0040 The present invention has a new outer diameter measurement of the preform at a position before the melting step in the furnace, usually at a safe position just immediately above the furnace";

"0045 ... the measuring position of the outer diameter of the bare fiber which is just above the coating device";

“0047     Variations of the present invention can include a combination of any partial invention in the present invention and any current conventional optical fiber drawing method or any mixture of current conventional optical fiber drawing method”;

“0090     FIG. 8 [with two bare fiber diameter monitors] shows another variation of embodiments of the present invention. In FIG.8 monitor 20 and monitor 30 or 31 or 32 have been selected. They are at the positions as above-mentioned respectively”.

Thus, the above reasonable amendment not only is supported by the Specification, but also does reflect the key features in the Specification as a whole well.

- b. “while heating and melting said preform, drawing said optical fiber from said preform at a drawing speed to change its the geometrical size of said preform to form ~~a bare~~ said optical fiber which is a bare optical fiber before coating”.

The above amendment is needed to precisely/correctly present the process because the optical fiber drawing process is drawing said optical fiber from said perform. Please see the Fiber Drawing Capstans 13 which is drawing said optical fiber form said preform in Figures 1-11, as well as “the fiber drawing speed” and “the preform feeding speed” in the Specification and the claims.

- c. “generating control signals based on ~~the measured preform diameter, the preselected preform diameter, the preform diameter deviation, the first measured bare fiber diameter, the first preselected bare fiber diameter, the first bare fiber diameter deviation, the second measured bare fiber diameter, the second preselected bare fiber diameter~~ and the second bare fiber diameter deviation for said optical fiber drawing process control”.

The above amendment is reasonable and supported by the Specification paragraph 0044 as recited as follows:

“0044     In the present invention, one choice of control law can be, but not limited to, based on a deviation of a final measured diameter of the bare fiber coming into the coating step from the specified outer diameter, a deviation of a measured diameter of the bare fiber leaving from the furnace from a preselected outer diameter, and a deviation of a measured outer diameter of the preform coming into the furnace from a preselected outer diameter.”

- d. Other amendment is related to word “the” or “a” in order to correspond to the above amendments.

- (2) Claim 38 (new): being a dependent claim of Claim 37 by adding

“wherein said control signals are further based on the measured preform diameter and the preselected preform diameter.”

That is reasonable and supported by the Specification paragraphs 0067 [including equation (3)] and 0044, especially the equation (3) as recited below and the Examiner’s proposed allowable claim.

$$“0067 \dots \Delta v_d = [v_f \cdot (2D \cdot \Delta D + \Delta D^2) + \Delta v_f \cdot (D + \Delta D)^2] / d^2 \quad (3).”$$

- (3) Claim 39 (new): being a dependent claim of Claim 38. That is the Examiner’s proposed allowable claim.

- (4) Claims 21 (currently amended): in view of the terms in the Examiner’s proposed claim and following the telephone discussion of 4-27-2006 with the SPE, amending the claim as marked as follows:

- “feeding said preform at a feeding speed into a furnace”;
- “drawing said optical fiber from said preform at a drawing speed ~~under tension~~ to form said optical fiber”;
- “a predetermined ~~nominal~~ preform value and a predetermined ~~nominal~~ fiber value”;
- “whereby said optical fiber drawing process is robustly controlled ~~with robust performance of said process and robust quality of said optical fiber~~ against deviations of the preform outer diameter or shape at different locations and against deviations of various preforms, ~~making a robust diameter-controlled optical fiber.~~”

- (5) Claim 22 (currently amended): in view of the terms in the Examiner’s proposed claim, amending the calim as marked as follows:

“its deviation from the predetermined ~~nominal~~ preform value, and said ~~nominal~~ predetermined preform value”.

(6) Claim 24 (currently amended): in view of the terms and the style used in the Examiner's proposed allowable claim, deleting word "nominal" and whereby-clause, and amending it as marked as follows:

"for said optical fiber drawing process control; to control the feeding speed of said preform and the drawing speed of said optical fiber".

(7) Claim 25 (currently amended): changing it from a dependent claim of claim 21 to a dependent claim of claim 24, then making the amended claim 25 short and clearer by deleting two paragraphs, because the deleted two paragraphs are already presented in Claim 24.

(8) Claim 26 (currently amended): in view of the terms in the Examiner's proposed claim and following the telephone discussion of 4-27-2006, deleting words "nominal", "under tension" (in drawing step), and "dynamically" (control), and amending the following clause:

"whereby to ~~maintain robustly controlled performance of~~ said optical fiber drawing process and ~~robust quality of said optical fiber by~~ the double monitoring the changes measurements of the bare fiber diameters from said measurement devices."

**Therefore, the amended claims do follow the Examiner's proposed allowable claim and the telephone discussion of 4-27-2006 with the SPE.**

**The claims amendments are reasonable and supported by the Specification, the Examiner's proposed allowable claim, and the telephone discussion with the SPE.**

**The amended claims do not contain any new limitations or radical changes that would raise new issues.**

**Applicant respectfully requests the PTO for consideration of the application as a whole, the facts, objective evidence, and distinguished features as claimed in the present invention, and that with the SPE and New Examiner's assistance, the claims are now in proper form, and that the claims all define patentably over the prior art, and that the application is now in condition for allowance, which action he respectfully solicits.**

### **III. Response to the Previous Examiner's Action of 2-10-2006 – Claim Rejections – 35 USC 112.**

**The following Remark in this Reply is mainly to address the points raised in the previous Examiner's Action of 2-10-2006. In the following, if the mentioned O.A. is without a specific date, it is of 2-10-2006.**

**III.1. The previous Examiner's Action of 2-10-2006 is in error to reject an allowable term "based on", because the rejection is against the fact, distorts Applicant's Reply and the fact, does not comply with 35 USC 112, 2<sup>nd</sup> paragraph, rules, decisions and MPEP as briefly pointed out below.**

**On the other hand, the SPE and new Examiner have allowed Applicant to use the term "based on".**

**Applicant appreciates the SPE's correct action because the term is an allowable term in claims of patents, and the term is well used in the laws, rules, decisions and MPEP.**

**III.1.1. The O.A. [p.4, L.3-4] is in error because the laws, rules, decisions and MPEP do not prohibit the term "based on" in claims.**

The O.A. [p.4, L.3-4] recites: "The term 'based on' (claims 22, 24, 25, 26, 28 and 30-34) is indefinite as to its meaning and thus makes the claims indefinite."

However, it is incorrect because the term "based on" is a well used and defined term and not an indefinite term.

- The Patent Laws USC 35 have used the term "based on" 16 times [Please refer to USC 35].
- The Patent Rules US 37 CFR have also used the term "based on" 31 times [Please refer to US 37 CFR].
- MPEP 2173.05 (Specific Topics Related to Issues Under 35 U.S.C. 112, Second Paragraph) does not list the term "based on" for a rejection.
- The court decisions and MPEP also use the term "based on", e.g., MPEP 2141, 2142,

706.02(j), 2173.05(j), and the following recited MPEP 2173.05(c):

- **MPEP 2173.05(c) II.**

“In a claim directed to a chemical reaction process, a limitation required that the amount of one ingredient in the reaction mixture should “be maintained at less than 7 mole percent” **based on** the amount of another ingredient. The examiner argued that the claim was indefinite because the limitation sets only a maximum amount and is inclusive of substantially no ingredient resulting in termination of any reaction. The court did not agree because the claim was clearly directed to a reaction process which did not warrant distorting the overall meaning of the claim to preclude performing the claimed process. *In re Kirsch*, 498 F.2d 1389, 182 USPQ 286 (CCPA 1974).”  
[emphasis added]

**III.1.2. From 1976 to the present, more than 316,000 patents, including the Previous Examiner’s examined Yoshimura 5073179 and Kenmochi 6178778, have used the term “based on” in claims. Please see attachments 1-2 [pp. 27-28].**

**III.1.3. Applicant always states that “The term ‘based on’ is a commonly used term, and well defined in common sense” [9-6-2005 Reply, p.18, L.8], that sense is used by Applicant in the claims, the specification, and the Replies.**

**III.1.4. Important is to read the whole phrase including the term “based on” and the whole claim as a whole, i.e.,**

- What words are before the term “based on” in the claims?
- What words are after the term “based on” in the claims?
- The whole phrase including the term “based on” and the words before and after the term “based on” should be read together.

**III.1.5. The O.A. [p.9, L.9-17] is in error because it distorts the Applicant’s Reply of 12-5-2005 [pp.60-61] and the fact.** The fact is that in the 12-5-2005 Reply [pp. 60-61] Applicant is using commonly-used definition of the term “based on” to address the reference Yoshimura 5073179 and the previous Examiner’s wrong concept on the term “based on”.

**III.1.6. The previous Examiner’s concept of the term “based on”, “Everything is inherently ‘based on’ everything else” [2-14-2005 O.A. p.10, L.7], is wrong.**



- For example, today's date is clearly not inherently based on the preform diameter measurement.

**III.1.7. Because the SPE and new Examiner have allowed the term "based on" in the claims, therefore the rejection to the claims due to the term "based on" has been rescinded.**

**III.2. The language "robustly controlled" (i.e., "robust control") in the amended Claim 21 and "to robustly control" (i.e., "robust control") in the amended Claim 26 are definite and allowable language in claims of US patents. Thus, the amended claims obviate the rejection on 35 USC 112 2<sup>nd</sup> paragraph.**

**The fact is that the terms "robust control" and "robust performance" have been well-established and defined technical terms in the control area in the world since late 1980's.**

**Applicant does not define these established technical terms, but does teach the present invention – the patentable control methods and the patentable processes of the optical fiber drawing process, "a kind of robust control" [e.g., paragraph 0049], in the Specification as a whole.**

**Applicant uses the common definition of the term and it is not necessary to ask him to do a new definition.**

**In addition to these facts, there are 574 patents which have used the word "robust" in their claims in recent years as searched from 1976 to the present. Please see attachment 3 [p. 29].**

**However, the O.A. fails to recognize or notice these clear facts. Furthermore, the O.A. fails to follow 35 USC 112 2<sup>nd</sup> paragraph, rules, decisions and MPEP 2173 as pointed out below.**

**Applicant notices that the 2-10-2006 O.A. has not listed the term "robust control" for the rejection, by comparing the 6-6-2005 O.A.**

**On the other hand, even though the term "robust performance" is not an indefinite term in control area and should be allowed, Applicant again shows his willing to work together by amending Claims 21-22 and 24-26 with deleting the term "robust performance" and its related terms in the claims.**

**Applicant appreciates that the SPE agrees with these amendments to Claims 21-22 and 24-26, and the SPE notices that the Specification teaches the present invention with the term "robust".**

**Thus, regarding to the above "robust"-type technical terms, the currently amended Claim 21 has only the term "robustly controlled", and the currently amended Claim 26 has only the term "to robustly control", i.e., "robust control" that has not been in the 2-10-2006 O.A. list for the rejection.**

**Thus, Applicant respectfully requests that the rejection to Claims 21-22 and 24-26 on the above technical language should be withdrawn.**

**III.2.1. The language "robustly controlled" and "to robustly control" (i.e., "robust control") in the amended Claims 21 and 26 are definite and allowable language in claims. Also, the "robust"-type language has been used and allowed in claims of US patents.**

- The terms "robust control", "robustly controlled", and "robustly control", as well as "robust performance", have been well frequently used since late 1980s, especially in 1990's and now in control area. They have been well established.
- It is not necessary to request Applicant to define well defined and established terms "robust control", "to robustly control", and "robustly controlled", as well as "robust performance".
- The technical terms "robust control" and "robust performance" are specific technical terms, which are definite terms and are not indefinite terms. So are the technical terms "robustly controlled" and "to robustly control", i.e., "robust control". They are Not indefinite.
- From the US PTO patent search engine, it is found that at least 574 patents have the word "robust" in their claims, 18 patents have the term "robust control" in their claims, and 25 patents have the word "robustly" in their claims. Please see attachments 3-6 [pp. 29-32].

Moreover, some of US patents have the word "robustly" in their claims, but not in their specifications, e.g., 5844927, 6874793, 5490743, 5437520, 5504857, 6133144, 6279920, 6484484, 6549638, 6680954, 6704898, 6787750, 6874793; and term "robust control" in their claims, but not in their specifications, e.g., 4959836, 5459383.

**III.2.2. The O.A. statement [p.3, L.10-11], “As far as Examiner can tell, Applicant has not referred to any portion of the specification or any evidence to define the scope of these words”, is in error, because Applicant is not required to define these established words, and because Applicant teaches his invention regarding the robust control of the optical fiber drawing process in the Specification.**

The O.A. [p.7, L.19-23] is also in error because the claims are clear and definite as claimed as a whole in light of the specification. The O.A. also uses a wrong unit of “micro/km” for the diameter deviation.

**III.2.3. Furthermore, in view of the above facts, the O.A. fails to follow 35 USC 112 2<sup>nd</sup> paragraph, rules, decisions and MPEP 2173.02, 2173.05 as recited and pointed below.**

- **The O.A. fails to comply with MPEP 2173.02 because of the above facts and its failure to consider the claim as a whole.**

**MPEP 2173.02 Clarity and Precision**

“When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement.

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim **as a whole** to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000).

Accordingly, a claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004) (holding that the disputed claim term “surrender value protected investment credits” which was not defined or used in the specification was discernible and hence not indefinite because “the components of the term have

well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence"). ” [emphasis added]

- **The previous Examiner fails to review the claim as a whole in light of the specification, as required by MPEP 2173.02, and also does not suggest his claim language or improved language to Applicant, as required or encouraged by MPEP 2173.02.**

**MPEP 2173.02 Clarity and Precision:**

“However, if the language used by applicant satisfies the statutory requirements of 35 U.S.C. 112, second paragraph, but the examiner merely wants the applicant to improve the clarity or precision of the language used, the claim must not be rejected under 35 U.S.C. 112, second paragraph, rather, the examiner should suggest improved language to the applicant.”

“If upon review of the claim as a whole in light of the specification, the examiner determines that a rejection under 35 U.S.C. 112, second paragraph, is not appropriate in the above-noted example, but is of the opinion that the clarity and the precision of the language can be improved by the deletion of the phrase "such as" in the claim, the examiner may make such a suggestion to the applicant. If applicant does not accept the examiner's suggestion, the examiner should not pursue the issue.” [emphasis added]

- **MPEP 2173.05(b) Relative Terminology**

“The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. ... .

In re Marosi, 710 F.2d 799, 218 USPQ 289 (CCPA 1983). The court further observed that it would be impractical to require applicants to specify a particular number as a cutoff between their invention and the prior art.” [emphasis added]

**III.2.4. It is noticed that the O.A. [p.6, L.6-11] has not listed the term “robust control” in the “words of degree”, compared to the 6-6-2005 O.A. [p.7, 22-23]. Thus, the terms “robustly controlled” and “to robustly control”, i.e., “robust control”, should be allowed as well.**

The O.A. [p.6, L.11-12] states “See *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984)”, but without a recitation or a brief content.

Here Applicant cites *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984) and MPEP 2173.05(b) just as cited as the above in **III.2.3.**

**III.2.5. In addition, Claims 21–22 and 24–26 have been amended as recited below. Applicant always has willing to work together and to obviate technical rejection. Applicant follows the telephone discussion with the SPE’s advice and agreement.**

- Claim 21 recites:

“... ..; whereby said optical fiber drawing process is robustly controlled against deviations of the preform outer diameter or shape at different locations and against deviations of various preforms.”

- Claim 26 recites:

“... ..; whereby to robustly control said optical fiber drawing process by the double measurements of the bare fiber diameters from said measurement devices.”

**III.2.6. In all, “robust control” is a definite term in the control area, and so are “robustly controlled” and “to robustly control”, i.e., “robust control”. They have been well used.**

**III.2.7. Thus, Applicant respectfully requests that the rejection to Claims 21-22 and 24-26 on the above technical terms “robustly controlled” and “to robustly control”, (i.e., “robust control”) should be withdrawn.**

**In the O.A., the only rejection to Claims 21-22 and 24-25 is on 35 USC 112 2<sup>nd</sup> paragraph to the above technical language.**

**Thus, Applicant respectfully submits that the amended Claims 21-22 and 22-25 have been placed in condition for allowance.**

**III.3. In the amended Claim 26, the amended term ““the double measurements” of the bare fiber diameters from said measurement devices” is clearly and fully supported by the Specification, and thus the amended Claim 26 clearly obviates the technical rejection – the first paragraph of 35 USC 112, as pointed below. Thus, Applicant respectfully requests withdrawal of the rejection.**

**III.3.1. The amended term is clearly supported by the Specification, e.g., paragraph 0043 and 0048 (“two measurements”), and especially Figures 6–7 (“two bare fiber monitors”).**

- The amended term in Claim 26 recites:

“whereby to robustly control said optical fiber drawing process by the double measurements of the bare fiber diameters from said measurement devices”.

- The Specification teaches the double measurements of the bare fiber diameter many times, e.g., paragraphs 0043 and 0048 as recited below:

“0043 According to the present invention, ... ..., wherein the outer diameter of the optical fiber on which no coating has been provided is measured at two different process positions, ... ..., and drawing conditions are robustly controlled based on the measurement data from all these measurement instruments.”

“0048 When twice outer diameter measurements are selected between the drawing furnace and the coating device, ... ....”

- Also, the Specification paragraph 0052 recites:

“7. A schematic of robust diameter-controlled optical fiber drawing process with two bare fiber diameter monitors;

8. Another schematic of robust diameter-controlled optical fiber drawing process with two bare fiber diameter monitors”.

- The amendment term is also clearly supported by the present invention figures such as:

Fig. 1: “Outer Diameter Measurement 20” and “Outer Diameter Measurement 40”;

Fig. 2: “Outer Diameter Measurement 20” and “Outer Diameter Measurement 30”;

Fig. 6 optical fiber drawing process with two bare fiber diameter monitors: “Outer Diameter Measurement 20” and “Outer Diameter Measurement 40”; and

Fig. 7 optical fiber drawing process with two bare fiber diameter monitors: “Outer Diameter Measurement 20” and “Outer Diameter Measurement 30”.

- As to the “double measurements of the bare fiber diameters”, Applicant clearly teaches it in the Specification including paragraphs 0043, 0048 and 0052, and Figures 1, 2, 7 and 8.

On the other hand, the prior art Yoshimura 5073179, Urruti 5551967, Harding 4793840 and Kohei (JP 06-206734) only teach single measurement of the bare fiber diameter for their control principles.

**III.3.2. The amendment is also supported by the Interview Summary of 3-11-2005 written by another Examiner Peter Chin, as summarized as “double outer diameter measurement”.**

- The Interview Summary of 3-11-2005 [Summary L.1-4] recites:

“Dr. Wang stated that invention patentably differs from prior art on the basis that there is 1) outer diameter measurement of preform prior to entering furnace; 2) double outer diameter measurement of the bare fiber after the furnace and prior to coating.”

**III.3.3. The amended term obviates the technical rejection 35 USC 112 the first paragraph based on 35 USC 112, rules, decisions and MPEP 2163 as cited below, because it is clearly supported and taught in the Specification including figures.**

- **MPEP 2163 II. METHODOLOGY FOR DETERMINING ADEQUACY OF WRITTEN DESCRIPTION**

**A. Read and Analyze the Specification for Compliance with 35 U.S.C. 112, para. 1**

**2. Review the Entire Application to Understand How Applicant Provides Support for the Claimed Invention Including Each Element and/or Step**

Prior to determining whether the disclosure satisfies the written description requirement for the claimed subject matter, the examiner should review the claims and the entire specification, including the specific embodiments, figures, and sequence listings, to understand how applicant provides support for the various features of the claimed invention. ... Compare Rasmussen, 650 F.2d at 1215, 211 USPQ at 327 (“one skilled in the art who read Rasmussen's specification would understand that it is unimportant how the layers are adhered, so long as they are adhered”) (emphasis in original), with Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991) ... (see, e.g., Wang Labs. v. Toshiba Corp., 993 F.2d 858, 865, 26 USPQ2d 1767, 1774 (Fed. Cir. 1993)) ... See, e.g., Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1379-80, 231 USPQ 81, 90 (Fed. Cir. 1986).” [emphasis added]

- **MPEP MPEP 2163 II.3.**

“An applicant may show possession of an invention by disclosure of drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole. See, e.g., Vas-Cath, 935 F.2d at 1565, 19 USPQ2d at 1118 (“drawings alone may provide a ‘written description’ of an invention as required by Sec. 112\”); In re Wolfensperger, 302 F.2d 950, 133 USPQ 537 (CCPA 1962) (the drawings of applicant's specification provided sufficient written descriptive support for the claim limitation at issue); ...

See Lockwood, 107 F.3d at 1572, 41 USPQ2d at 1966 ("written description" requirement may be satisfied by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention")." [emphasis added]

- **MPEP 2163.02 Standard for Determining Compliance With the Written Description Requirement**

"An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

The subject matter of the claim need not be described literally (i.e., using the same terms or in haec verba) in order for the disclosure to satisfy the description requirement." [emphasis added]

**III.3.4. Applicant again shows his willing to work together and further amends Claim 26 to replace the term "double monitoring", which is rejected on 35 USC 112 1<sup>st</sup> paragraph in the O.A., by the term "double measurements", to follow the telephone discussion of 4-27-2006 with the SPE.**

**III.3.5. In view of the above facts, grounds, reasons, 35 USC 112, rules, decisions and MPEP, Applicant respectfully requests withdrawal of the rejection to Claim 26.**

**III.3.6. In view of the agreed amendments to Claim 26, Applicant respectfully submits that the amended Claim 26 has been placed in condition for allowance.**

The only rejection to Claim 26 in the O.A. is on 35 USC 112 1st paragraph to the term "double monitoring" and on 35 USC 112 2nd paragraph to the term "robust".

From the facts and reasoning in the above section **III.2** and the present section **III.3**, the amended Claim 26 is allowable for patent.

**III.4. As to the term "historical measurement data", it is definite as to its meaning in light of the specification. Applicant again shows his willing to work together with further efforts to cancel the claim with that term to follow the telephone discussion with the SPE's advice.**



#### **IV. Thanks for Consideration**


**Applicant again expresses his thanks to the Honorable Under Secretary, the Honorable Commissioner for Patents, the PTO SPE, the SPE and new Examiner for their consideration of the application of the present invention.**

#### **V. Conclusion**

**Applicant respectfully requests the PTO to view and recognize the new, useful, unobvious and patentable merit of the claimed present invention as a whole.**

**For all of the above and the previously submitted Replies, Applicant respectfully submits that the claims, with the SPE and New Examiner's assistance, are now in proper form, and that the claims all define patentably over the prior art. Therefore applicant submits that this application is now in condition for allowance, which action he respectfully solicits.**

Very respectfully,



Sheng-Guo Wang

704-503-0747 or 704-687-3265


May 10, 2006

----- Applicant Pro Se -----

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May 10, 2006



Sheng-Guo Wang, Applicant

## Attachment 1

Patent Database Search Results: ACLM/"based on" in 1976 to present

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ACLM/"based on": 316312 patents.

Hits 1 through 50 out of 316312

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Refine Search ACLM™ based on

- | PAT. NO.     | Title   |
|--------------|---|
| 1 7,003,799  | <b>T</b> Secure routable file upload/download across the internet   |
| 2 7,003,798  | <b>T</b> System for operating device from remote location and apparatus for use in the system   |
| 3 7,003,794  | <b>T</b> Multicasting transmission of multimedia information  |
| 4 7,003,792  | <b>T</b> Smart agent based on habit, statistical inference and psycho-demographic profiling   |
| 5 7,003,791  | <b>T</b> Remote accessible programming  |
| 6 7,003,790  | <b>T</b> Broadcast-program selection history information acquisition apparatus and its method   |
| 7 7,003,780  | <b>T</b> Method and an apparatus to extend the logic volume manager model to allow device management plug-ins   |
| 8 7,003,774  | <b>T</b> Multidimensional advanced adaptive software architecture   |
| 9 7,003,773  | <b>T</b> Dynamic interface aggregation on demand  |
| 10 7,003,772 | <b>T</b> Policy management for distributed computing and a method for aging statistics  |
| 11 7,003,765 | <b>T</b> Computer-based pre-execution analysis and verification utility for shell scripts   |
| 12 7,003,758 | <b>T</b> System and method for lithography simulation   |
| 13 7,003,756 | <b>T</b> Method and apparatus for controlling rippling during optical proximity correction  |
| 14 7,003,754 | <b>T</b> Routing method and apparatus that use of diagonal routes   |
| 15 7,003,745 | <b>T</b> Performance modeling for circuit design  |
| 16 7,003,744 | <b>T</b> Global equivalent circuit modeling system for substrate mounted circuit components incorporating substrate dependent characteristics                                       |
| 17 7,003,743 | <b>T</b> Method and system of data processor design by sensitizing logical difference   |
| 18 7,003,742 | <b>T</b> Methodology for the optimization of testing and diagnosis of analog and mixed signal ICs and embedded cores  |
| 19 7,003,741 | <b>T</b> Method for determining load capacitance  |
| 20 7,003,738 | <b>T</b> Process for automated generation of design-specific complex functional blocks to improve quality of synthesized digital integrated circuits in CMOS using altering process |

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnethtml%...> 2/27/2006

## Attachment 2

Patent Database Search Results: ACLM/"based on" AND EXA/"Hoffmann, John" in 1976 to pre... Page 1 of 1

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Results of Search in 1976 to present db for:

ACLM/"based on" AND EXA/"Hoffmann, John": 7 patents.

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ACLM/"based on" AND EXA/"Hoffmann, John"

PAT. NO.	Title
-------------	-------

- |             |  |
|-------------|--|
| 1 5,496,390 | T Method of manufacturing an optical module for wavelength division multiplex optical transmission with regulation of the coupling ratio and coupling length |
| 2 5,352,259 | T Method of manufacturing optical fiber preform  |
| 3 5,340,371 | T Optical fiber splicing chuck   |
| 4 5,240,488 | T Manufacture of vitreous silica product via a sol-gel process using a polymer additive  |
| 5 5,073,179 | T Method for controlling fiber diameter during optical fiber drawing process   |
| 6 5,071,459 | T Bushing balance controller for multiple segment bushings   |
| 7 5,059,229 | T Method for producing optical fiber in a hydrogen atmosphere to prevent attenuation   |

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Attachment 3

Patent Database Search Results: ACLM/robust in US Patent Collection

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Results of Search in US Patent Collection db for:

ACLM/robust: 574 patents.

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[Refine Search](#)

ACLM/robust

- | PAT.<br>NO.  | Title   |
|--------------|---|
| 1 7,026,266  | T Catalytic formulation and its preparation   |
| 2 7,025,724  | T Wavelet depulsing of ultrasound echo sequences  |
| 3 7,023,824  | T Method, apparatus, and system for optimizing transmission power and bit rate in multi-transmission scheme communication systems |
| 4 7,023,798  | T Adaptive call admission control for use in a wireless communication system  |
| 5 7,023,581  | T Compensating for drift and sensor proximity in a scanning sensor, in color calibrating incremental printers                     |
| 6 7,020,828  | T Trellis encoder with rate 1/4 and 1/2 for a backward compatible robust encoding ATSC DTV transmission system                    |
| 7 7,016,846  | T Robust checksums  |
| 8 7,016,827  | T Method and system for ensuring robustness in natural language understanding   |
| 9 7,016,446  | T Channel decoder for a digital broadcast receiver  |
| 10 7,016,296 | T Adaptive modulation for fixed wireless link in cable transmission system  |
| 11 7,003,033 | T Systems and methods for encoding redundant motion vectors in compressed video bitstreams  |
| 12 7,000,155 | T Redundancy register architecture for soft-error tolerance and methods of making the same  |
| 13 6,999,429 | T Access technology integrated header compression   |
| 14 6,998,981 | T Secure screen   |
| 15 6,996,717 | T Semi-fragile watermarking system for MPEG video authentication  |
| 16 6,996,528 | T Method for efficient, safe and reliable data entry by voice under adverse conditions  |
| 17 6,996,306 | T Electrostatically operated micro-optical devices and method for manufacturing thereof   |
| 18 6,996,133 | T Digital communication system for transmitting and receiving robustly encoded data   |
| 19 6,989,100 | T Methods for time-alignment of liquid chromatography-mass spectrometry data  |
| 20 6,986,048 | T Protecting content from illicit reproduction by proof of existence of a complete data set using security identifiers            |

<http://patft1.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnethtml...> 4/17/2006

Attachment 4

Patent Database Search Results: ACLM/robustly in US Patent Collection

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Results of Search in US Patent Collection db for:

ACLM/robustly: 25 patents.

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ACLM/robustly

PAT. NO.	Title
1 7,019,292	<a href="#">T E-beam detection of defective contacts/vias with flooding and energy filter</a>
2 6,874,793	<a href="#">T Variable camber suspension system</a>
3 6,851,083	<a href="#">T Method for transmitting source encoded digital signals</a>
4 6,799,104	<a href="#">T System and method of controlling a vehicle steer-by-wire system applying robust control</a>
5 6,796,532	<a href="#">T Surface plasma discharge for controlling forebody vortex asymmetry</a>
6 6,787,750	<a href="#">T Method and apparatus for robust optical tracking with beacon markers</a>
7 6,704,898	<a href="#">T Combined hybrid automatic retransmission request scheme</a>
8 6,701,266	<a href="#">T Measurement data fairing method</a>
9 6,687,451	<a href="#">T Method and system for first-order RF amplitude and bias control of a modulator</a>
10 6,680,954	<a href="#">T ATM inverse multiplexing system</a>
11 6,585,405	<a href="#">T Mixing liquids and entrainment mixing of vapor into liquids</a>
12 6,582,639	<a href="#">T Process for making vehicle headliner</a>
13 6,549,638	<a href="#">T Methods for evidencing illicit use of a computer system or device</a>
14 6,484,484	<a href="#">T Lawn mower for providing power to a garden implement</a>
15 6,279,920	<a href="#">T Variable camber suspension system</a>
16 6,178,888	<a href="#">T Detonator</a>
17 6,133,144	<a href="#">T Self aligned dual damascene process and structure with low parasitic capacitance</a>
18 6,070,218	<a href="#">T Interrupt capture and hold mechanism</a>
19 6,006,082	<a href="#">T FM demodulating device using an extended kalman filter</a>
20 5,844,927	<a href="#">T Optical fiber distributed feedback laser</a>
21 5,703,887	<a href="#">T Synchronization and error detection in a packetized data stream</a>
22 5,504,857	<a href="#">T Highly available fault tolerant relocation of storage with atomicity</a>
23 5,490,743	<a href="#">T System for installing material in the ground</a>
24 5,437,520	<a href="#">T Sealing system for in-ground barrier</a>
25 4,462,633	<a href="#">T Door stop arrangement for a vehicle</a>

Attachment 5

Patent Database Search Results: ACLM/"robust control" in US Patent Collection

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ACLM/"robust control": 18 patents.

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ACLM/"robust control"

- | PAT.<br>NO.  | Title  |
|--------------|--|
| 1 6,799,104  | <b>T</b> System and method of controlling a vehicle steer-by-wire system applying robust control                   |
| 2 6,779,114  | <b>T</b> Tamper resistant software-control flow encoding   |
| 3 6,757,601  | <b>T</b> System and method of controlling a steer-by-wire system having a road wheel reference angle generator     |
| 4 6,718,243  | <b>T</b> System and method of controlling a vehicle steer-by-wire system applying gain scheduling control          |
| 5 6,694,239  | <b>T</b> System and method of controlling vehicle steer-by-wire systems  |
| 6 6,691,009  | <b>T</b> System and method of controlling a vehicle steer-by-wire system applying multivariable decoupling control |
| 7 5,992,267  | <b>T</b> Robust control for three-position transmission shift actuator assembly                                    |
| 8 5,978,752  | <b>T</b> Model validation algorithm for characterizing parameters and uncertainty in a disc drive                  |
| 9 5,959,861  | <b>T</b> Adaptive robust control device  |
| 10 5,758,047 | <b>T</b> Method of process controller optimization in a multivariable predictive controller                        |
| 11 5,724,239 | <b>T</b> Robust control system for designing logic for imperfect model   |
| 12 5,718,138 | <b>T</b> Loop control system for a rolling mill  |
| 13 5,574,638 | <b>T</b> Method of optimal scaling of variables in a multivariable predictive controller utilizing range control   |
| 14 5,572,420 | <b>T</b> Method of optimal controller design for multivariable predictive control utilizing range control          |
| 15 5,459,383 | <b>T</b> Robust active damping control system  |
| 16 5,371,669 | <b>T</b> Sliding mode control method having terminal convergence in finite time                                    |
| 17 5,351,184 | <b>T</b> Method of multivariable predictive control utilizing range control  |
| 18 4,959,836 | <b>T</b> Register robustness improvement circuit and method  |

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Attachment 6

Patent Database Search Results: ACLM/"robust performance" in US Patent Collection

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ACLM/"robust performance": 5 patents.

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PAT. NO.	Title
1 <a href="#">6,775,610</a>	<a href="#">T Engine testing system using speed controller designed by m.mu. synthesis method</a>
2 <a href="#">6,768,940</a>	<a href="#">T Engine testing system using torque controller designed by .mu.-synthesis method</a>
3 <a href="#">6,170,506</a>	<a href="#">T Method and circuit for actively cleaning electrohydraulic valves in a hydraulic control valve circuit</a>
4 <a href="#">6,064,997</a>	<a href="#">T Discrete-time tuning of neural network controllers for nonlinear dynamical systems</a>
5 <a href="#">5,347,446</a>	<a href="#">T Model predictive control apparatus</a>

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